



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,278	01/23/2002	Tao Chen	000457	8553

23696 7590 01/30/2004

Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER

YUN, EUGENE

ART UNIT	PAPER NUMBER
----------	--------------

2682

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/056,278

Applicant(s)

CHEN ET AL.

Examiner

Eugene Yun

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 6-17<sup>28-27</sup>, and 19-20<sup>2</sup> are rejected under 35 U.S.C. 102(b) as being anticipated by Keskitalo et al. (US 5,920,553 "IDS").

Referring to Claim 1, Keskitalo teaches a method in a wireless communication system for selectively combining a plurality of received transmissions to recover a message comprised of a plurality of frames, the method comprising:

Processing each of the plurality of transmissions separately to receiver the message (see col. 5, lines 45-53); and

If the message cannot be recovered error-free from a single transmission,

Determining erased frames in a message recovered from a first transmission (see col. 5, lines 37-40),

Determining good frames recovered from remaining ones of the plurality of transmissions (see col. 5, lines 30-35),

Forming at least one combined message, wherein each combined message includes a particular combination of good frames substituting for the erased frames (see col. 5, lines 35-40), and

Checking each combined message to determine whether it is good or erased (see ABSTRACT).

Claims 19, 26, and 27 have similar limitations as Claim 1.

Referring to Claim 2, Keskitalo also teaches the first transmission having the highest signal quality among the plurality of transmissions (see col. 5, lines 41-44).

Referring to Claim 3, Keskitalo also teaches checking each frame in the message recovered from the first transmission and marking each frame failing the checking as an erased frame (see col. 5, lines 37-40).

Referring to Claim 6, Keskitalo also teaches identifying each erased frame in the message recovered from the first transmission (see col. 5, lines 37-40), identifying a good frame from one of the plurality of transmissions corresponding to each erased frame (see col. 5, lines 30-35) and substituting each erased frame with the corresponding good frame to form the combined message (see col. 5, lines 35-40).

Referring to Claim 7, Keskitalo also teaches the good frame corresponding to each erased frame identified based on a frame number associated with each frame (see col. 6, lines 57-60).

Referring to Claim 8, Keskitalo also teaches identifying a plurality of combinations of good frames for the erased frames in the message recovered from the first transmission and substituting each combination of good frames for the erased frames to form a respective combined message (see col. 5, lines 30-40).

Referring to Claim 9 and 21, Keskitalo also teaches combining symbols for two or more frames from two or more transmissions corresponding to the erased frame and

decoding the combined symbols to derive a good frame for the erased frame (see col. 5, lines 45-53).

Referring to Claim 10, Keskitalo also teaches ranking the plurality of transmissions and wherein symbols for frames corresponding to the erased frames are combined in a particular order determined based on the ranking of the plurality of transmissions (see col. 5, lines 41-44).

Referring to Claim 11, Keskitalo also teaches the plurality of transmissions ranked based on signal quality (see col. 5, lines 41-44).

Referring to Claim 12, Keskitalo also teaches weighting symbols for each of the two or more frames corresponding to the erased frame based on a respective weight determined based on the signal quality of the two or more transmissions from which the two or more frames are recovered and wherein the weighted symbols are combined (see col. 5, lines 41-44).

Referring to Claim 13, Keskitalo also teaches each transmission from a respective signal source (see ABSTRACT).

Referring to Claim 14 and 25, Keskitalo also teaches each transmission a forward link signal from a respective base station in a CDMA system (see ABSTRACT).

Referring to Claim 15, Keskitalo also teaches the plurality of received transmissions are approximately synchronous (see col. 4, lines 66-67 and col. 5, lines 1-2).

Referring to Claim 16, Keskitalo also teaches the plurality of received transmissions are approximately asynchronous (see col. 4, lines 66-67 and col. 5, lines 1-2).

Referring to Claim 17 and 24, Keskitalo also teaches the message to be recovered error-free as a page message (see col. 3, lines 49-51).

Referring to Claim 20, Keskitalo also teaches a frame buffer to store good frames recovered from the plurality of symbol streams (see col. 5, lines 30-35).

Referring to Claim 22, Keskitalo also teaches a symbol buffer to store symbols corresponding to each erased frame in the message recovered from the first symbol system (see col. 5, lines 36-39).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 5, 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keskitalo in view of Alanara (US 6,286,122).

Referring to Claim 18, Keskitalo teaches a method in a CDMA communication system for selectively combining a plurality of non-synchronous forward link transmissions to recover a page message comprised of a plurality of frames, the method comprising:

Art. Unit: 2682

Processing each of the plurality of transmissions separately to recover the page message (see col. 5, lines 45-53); and

If the page message cannot be recovered error-free from a single transmission,

Determining erased frames in a message recovered from a first transmission (see col. 5, lines 37-40),

Determining good frames recovered from remaining ones of the plurality of transmissions (see col. 5, lines 30-35),

Forming a combined message, by substituting each erased frame with a corresponding good frame (see col. 5, lines 35-40), and

Checking each combined message to determine whether it is good or erased (see ABSTRACT).

Keskitalo does not teach each frame and each message checked based on a set of cycle redundancy check bits generated. Alanara teaches each frame and each message checked based on a set of cycle redundancy check bits generated (see ABSTRACT). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Alanara to said device of Keskitalo in order to better prevent fading while receiving signals to form a message.

Referring to Claims 4, 5, and 23 Keskitalo does not teach each frame and each message checked based on a set of cycle redundancy check bits generated. Alanara teaches each frame and each message checked based on a set of cycle redundancy check bits generated (see ABSTRACT). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of


Art Unit: 2682

Alanara to said device of Keskitalo in order to better prevent fading while receiving signals to form a message.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Yun whose telephone number is (703) 305-2689. The examiner can normally be reached on 8:30am-5:30pm Alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (703) 308-6739. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

  
Eugene Yun  
Examiner  
Art Unit 2682

EY

  
VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

11/26/04